BETTER FARMING SPECIAL

OF THE

CANADIAN PACIFIC RY. CO.

1912

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PHOTO BY HADDEN ALVINSTON
LECTURING STAFF ON THE ONT. DEPT OF AGRICULTURE BETTER FARMING SPECIAL ON C.P.R. 1912

Lecturing Staff on "Better Farming Special."

C. P. R.'S BETTER FARMING SPECIAL

WITH the characteristic enterprise that has dominated the Canadian Pacific Railway since its inception, the "Better Farming Special" was inaugurated with the co-operation of the Ontario Government, and started out on its extensive trip through the Province of Ontario on February 26th, 1912, and returned to the Windsor Street station at Montreal on March 16th. The train was accompanied by Mr. H. P. Timmerman, Industrial Commissioner of the Canadian Pacific Railway, and it consisted of three lecture cars, four demonstration cars, one sleeper, and one dining car.

During its very successful journey over twenty thousand people derived great benefit from the instruction given by the many expert agriculturalists carried by the train. The "B.F.S." received various names during its travels, amongst them being the "Farmer's Institute on Wheels" and the "Ontario Agricultural College," but whatever title it deserved the train had very fruitful results and carried home to the farmer a complete demonstration of modern farming methods, equipment and results. It filled what had been void : some means of transporting an agricultural college on a small scale around the country, as so few farmers nowadays can spare the time to travel in search of knowledge, and, as it is important that they should have this knowledge, this unique means of imparting that knowledge was devised with beneficial results.

SUPERINTENDENT'S REPORT

The following are extracts from the report on "Better Farming Special," run by co-operation of the C.P.R. and the Ontario Department of Agriculture; prepared by Mr. George A. Putnam, Superintendent of the Institute.

"The above agricultural instruction train covered the main lines of the C.P.R. in Ontario. The officials of the Department of Agriculture, including the Minister, and all those connected in any way with the work of the train, were delighted with the deep interest taken by the farmers and townspeople who visited the train. Many words of commendation were heard at the time, and favorable reports as to the value and practicability of the instruction given have reached the Department since. Too much cannot be said in praise of the hearty co-operation of the C.P.R. officials and staff. The Industrial Commissioner, Mr. H. P. Timmerman, was untiring in his efforts to make arrangements which were to insure the success of the undertaking. He accompanied the train during the greater portion of the trip, and his encouragement and kindly consideration was a material factor in making the work a success. The four baggage cars and three lecture coaches, together with the diner and sleeper, were admirably suited to the purpose.

"While the weather conditions were unfavorable during the first two days and the last two days of the trip, the conditions during the balance of the time were such as to enable the farmers to get to the train with a fair degree of comfort, although in some sections the conditions of the roads prevented many from attending. The attendance varied considerably, being as low as 400 on one of the unfavorable days, and reaching a total of 2,170 on the banner day. The total number to take advantage of the instruction reached near the 20,000 mark.

"We were fortunate in being able to secure a most competent staff of lecturers. These were drawn from the Ontario Agricultural College, Farmers' Institute staff, District Representatives and Dairy Instructors connected with the Provincial Department of Agriculture, as well as some assistance from the Dominion Department af Agriculture.

"The train was under the direction of Geo. A. Putnam, Supt. of Institutes and Director of Dairying, Toronto.

"The staff consisted on an average of 14 to 20 lecturers and demonstrators. Upon arrival at the place of meeting, it was usual to allow those in attendance to view the exhibits and receive explanations from those in charge for an hour and a quarter. Then a series of lectures were given in keeping with the agricultural practices and possibilities of the district. In the selection of subjects to be considered, we relied largely upon knowledge of the agricultural practices in the various sections, and also consulted with the members of the staff, Institute Officers, District Representatives of the Department, and others, who were able to give reliable advice, as to the agricultural requirements and possibilities of the various sections.

"In the district covered on February 26th and 27th, there is no doubt but that a very intensive line of agriculture will soon be followed. The land is of such a nature that market gardening and the growing of special crops, such as vegetables, sugar beets, seed corn, beans, can be followed to great advantage. On the 28th we met with a number of farmers at Caradoc who are specializing in the production of potatoes. This section is well suited to this line, and the majority of the farmers are well posted in up-to-date methods in potato-growing. On February 29th to March 1st we had for the most part successful meetings in a district which is devoted largely to dairying. Much interest was manifested in this section in the growing of alfalfa and corn, and the improvement of the dairy herd. On March 2nd and 4th the district covered was much interested in the production of beef, with an evidence of dairying receiving greater attention at some points. On March 5th we visited a district where the breeding of horses is a live question. At Streetsville and Brampton much interest was taken in dairy matters. In the district between Brampton and Owen Sound the farmers have not as yet specialized to any great extent. They are, however, improving along all lines,—beef production, dairying, horse-breeding and general farm crops. At Bolton and Woodbridge dairy topics were most acceptable. This was also the case in the vicinity of Agincourt. At Claremont and Myrtle, beef production and horse-raising are receiving special attention. Throughout the balance of the trip dairying seemed to be the one topic of greatest interest, although more or less interest was shown in the general improvement of farm crops, the introduction of a better class of horses and improved methods of cultivation. In nearly all districts the farmers showed a deep interest in the growing of alfalfa.

" Judging from the interest shown in the various exhibits, the same were well chosen, and while some of the ground covered was of interest in only certain portions of the territory visited, other features were of interest in all sections. The exhibit which attracted most attention was that dealing with farm crops. The germination tests, showing the difference in vitality between large plump seeds, small seeds, sprouted seed and split seed, presented a very impressive lesson, while the exhibits indicating the varying yields from different times of sowing, also created great interest.

" Another subject of general interest was that of dairying. The producers of milk and cream were impressed as never before with the importance of proper care of the raw material on the farm. The effects of contamination, the difference in yield as between high testing and low testing milk, the various utensils used in buttermaking and the testing and cooling of milk, attracted considerable attention. Poultry-raising was another subject of general interest. Possibly the high price of eggs and poultry during the past season was partly responsible for the keen interest in this feature of agriculture. In many sections the subject of drainage was very carefully enquired into by the farmers, and much information of value was imparted.

" Live-stock Topics—Horse-breeding, Improvement of the

Dairy Herd and General Care of Farm Animals were acceptable at all points. Fruit-growing is receiving greater attention than ever before in the history of Ontario, and many sections which have not heretofore paid much attention to this feature of agriculture were awakened to its possibilities. Many enquiries as to varieties, methods of cultivation, pruning, spraying, etc., were answered. Commercial feeding stuffs and fertilizers were of great interest in a few sections, while at all points there were occasional enquiries regarding this feature of work. Beekeeping is receiving more and more attention from year to year, and this feature was a subject of enquiry at nearly all points, the women in attendance showing keen interest. One of the most complete and interesting exhibits was that covering concrete construction. The farmers are awakening to the possibilities of this form of construction.

" Altogether this form of instruction is a most effective way of reaching farmers. We believe that many that have not hithertofore taken any interest in the regular Farmers' Institute meetings and other forms of instruction were attracted and benefited by the Better Farming Special."

DEMONSTRATION CARS

Three day coaches were utilized for lecture halls. Lectures on different subjects were given simultaneously in each coach, in order to get the most instruction in the allotted time allowed at each stopping place. One coach was reserved for women and children, where instruction was given in bacteriological matters relating to milk, small-fruit growing, beekeeping, poultry and gardening. It was splendidly equipped in every department. The exhibits included skeletons of horses and other farm animals; bones as they should be in a healthy horse and bones showing spavins, ringbone, splints, etc.; hair balls taken from stomachs of calves and lambs ; calculi from the capillarity of different soils, affected with tuberculosis ; samples of milk showing changes produced by tiny specks of manure, pieces of straw, flies, well water, etc.; model cooling tanks, insulated tanks, butter-workers, poultry fattening crates, live fowls, poultry feeds, model poultry houses and brooders, cement tiles, farms and methods of concrete construction, fertilizers, tubes showing the capillarity of different soils, effect of soil mulches in conserving moisture, miniature tile drains and methods of taking surveys for laying out drains, cases of apples, bee boxes and equipment for the apiary ; seeds, insects, weeds, grains, and hundreds of other things of interest.

LIST OF LECTURERS

Bailey, C. F., Assistant Deputy Minister of Agriculture, Toronto, spoke on "Horse-breeding and Beef Cattle."

Bartman, R. W., Department of Agriculture, Toronto ; " Fruit."

Caesar, L., O.A.C., Guelph ; "Insect Pests and Fungus Diseases."

Campbell, John, Woodville ; "Beef Cattle and Cultivation."

Carey, L. H., Toronto ; " Fruit."

Carey, J. P., Dominion Fruit Inspector ; " Fruit."

Clark, J. W., Cainsville ; " Poultry."

Day, W. H., Prof. of Physics, O.A.C., Guelph ; "Drainage."

Duke, J. O., Ruthven ; " Corn."

Edwards, W. E. J., Essex ; " Corn."

Edwards, S. F., Prof. of Bacteriology ; "Diseases of Fowls and Dairy Bacteriology."

Fairbairn, J. B., Grimsby ; " Potato-growing."

Fulmer, H., O.A.C., Guelph ; " Feeds and Fertilizers."

Gardhouse, Jno., Highfiefd ; " Beef Cattle and Heavy Horses."

Gracey, A. E., Dairy Instructor Western Ontario, Woodstock ; " Dairying."

Groh, Anson, Preston ; " Crop Improvement and Dairy Herd."

Graham, Prof. W. R., O.A.C., Guelph ; " Poultry."

Grose, Henry, Lefroy ; " Crop Improvement."

Goggin, V. T., Toronto ; " Concrete Work."

Herns, F., London (Chief Dairy Instructor Western Ontario), " Dairying."

Harcourt, R., Prof. of Chemistry, O.A.C., Guelph ; " Feeds and Fertilizers."

Kerr, J. W., Ottawa Nurseries, Woodroffe ; " Fruit and Poultry."

Kidd, W. F., Simcoe, " Fruit."

Mallory, F. R., Frankford, Ont. ' " Feeding and Breeding of Dairy Cattle."

Millen, F. E., O.A.C., Guelph ; " Beekeeping."

Mason, A. W., O.A.C., Guelph ; " Crop Improvement."

Mowbray, W., Wallaceburg ; " Sugar Beets."

Pettit, Morley, Provincial Apiarist, O.A.C., Guelph ; " Beekeeping."

Publow, G. G., Chief Dairy Instructor, Eastern Ontario, Kingston ; " Dairying."

Reek, W. R., Department of Agriculture, Toronto ; " Drainage."

Reed, Dr. H. G., Georgetown, Ont.; " Horse-breeding."

Spry, J. R., O.A.C., Guelph ; " Drainage."

Squirrell, W. J., O.A.C., Guelph ; " Seed Selection and Alfalfa-growing."

Stevenson, R. S., Ancaster ; " The Dairy Herd."

Singleton, F. R., Smith's Falls (Dairy Instructor) ; "Dairying."

Wade, R., O.A.C., Guelph ; " Beef and Dairy Cattle."

Wilson, J. Lockie, Department of Agriculture, Toronto ; " Field Crop Competitions."

Whitley, C. F., Dairy Records, Department of Agriculture, Ottawa ; " Cow Testing."

Zavitz, C. A., O.A.C., Guelph ; " Field Crops."

POULTRY BREEDING

Prof. Graham, of the Ontario Agricultural College, says:

"Select your eggs for hatching from quick maturing fowls which are also good layers.

"We have two strains of Rocks at the O.A.C. A lot from one strain has averaged us 180 eggs in a year, while the other has averaged 120. The extreme range is represented by one hen in one flock which produced only 13 eggs in the year, while the best hen in the other had 282 to her credit. Why the difference ? One flock had been bred for laying, the other had been bred for appearance.

"Keep only the young fowls for laying. A normal yield for the first year of a hen's life is 150 eggs ; for the second 100; for the third 80. In handling a hen in her third year you are simply trading dollars. Her produce will not more than pay for her feed.

"Cleanliness is essential all through in poultry-raising. An incubator should be well scrubbed with hot water before the eggs are put in. None but absolutely clean eggs should be used for hatching. Mould on eggs may cause the chicks produced from these to die like flies before the seventh day out.

"Be careful even of the oil can. The odor from an oil can, if the can is left in the incubator room, will reduce your hatch 10 per cent.

"One of the chief causes of loss after hatching is found in allowing the newly-hatched chicks to pick at each others' droppings. In order to prevent this, do not let them down from the top of the incubator for three or four days.

"Do not in any case feed the young chicks for the first two days after hatching. The yolk, which is incorporated in the body, has proved sufficient, in some cases, to keep chickens alive for seven days without feeding. They can be fed either cracked wheat or pin-head oatmeal right from the beginning of the feeding period."

FEEDING FOR EGGS.

"Our layers at the O.A.C. are fed either on corn and wheat or wheat and buckwheat, mixed half and half, in the morning. The grain is scattered in the litter the night before and the hens help themselves to it in the morning. The quantity given is about two handfuls to three birds. At noon we give crushed oats, such as you will use for horses, this being fed dry. For supper the hens get the same feed as at noon, and all they want of it.

"Give them clover leaves from the hay mow, and plenty of these. A hundred hens will eat a bushel daily. These not only supply lime, but they tend to prevent impaction of the stomach.

"Take care of the eggs when they are produced. Remember the shell of the egg is no protection against the absorption of flavors. Dirty eggs will go mouldy even in cold storage ; washed eggs are no better.

"The market is waiting for you, but the goods must be right if you want the right price."

HATCHING TIME

(Replies made by Mr. J. W. Clark, Cainsville, Ont.)

"What is the proper time for hatching chickens?"

"Any time in the months of April and May."

"When should poultry be housed for winter?"

"That depends upon the weather, considerably. However, it is not well to put off housing much after October 1st."

"How many eggs should be set under a hen for the best results?"

"In April I would say from 11 to 13, depending somewhat on the size of the hen, and in May from 13 to 15. Big hens cover more eggs, but are not always the best hatchers, as occasionally you find a big hen is clumsy."

"Do you recommend round or flat nests for hatching purposes?"

"It is always better to see that the nest is flat, as concave or round nests often mean broken eggs."

"What is the best means of hatching duck eggs?"

"A good sized hen is the best hatcher I know of for ducks."

A TALK ON MILK

(By Frank Herns, Chief Instructor in Dairying for Western Ontario.)

" In order that we may take intelligent care of milk it is necessary that we should know something of its composition. Average milk, then, contains various substances in the following proportions :—

Water	87.5 per cent.
Fat	3.6 per cent.
Casein	2.5 per cent.
Albumen	.7 per cent.
Sugar	5. per cent.
Ash	.7 per cent

" Fermentation in the sugar causes the milk to sour. A single fly, carrying injurious bacteria on its legs, may cause the casein to decompose. Filth from a single hair has caused not only decomposition of the casein but mould in the milk as well. A piece of hay falling in the milk has caused like effect.

" The first thing to do, in order to avoid these injurious effects, is to keep out the dirt. The second is to cool the milk, directly after it comes from cow, as the work of injurious bacteria is delayed by a low temperature. If the milk is intended for city consumption it should be cooled to 50 or 55 degrees. If intended for a cheese factory 60 to 65 degrees will do, because in that case the milk does not have to be held so long.

" Milk, because of the various substances of which it is composed, makes a perfect food. The casein and albumen form muscle and flesh ; the sugar gives fat and energy ; the ash creates bone and the water gives fluidity to the blood. While a perfect food it would have to be taken in too large a quantity to serve for adults, but for infants it yields everything required, and even for adults it is a most valuable addition to the food used."

Questions and Answers

(Replies made by Mr. Frank Herns, London.)

" What is the effect of a fly getting into the milk ?"

" It is very liable to carry enough putrefactive bacteria on its wings to give rise to abnormal flavors, start decomposition and possibly introduce disease germs in the milk."

" Should flies or dirt get into the milk, what is the best thing to do in order to prevent growth of the bacteria introduced into it ?"

" Cleanliness and immediate cooling to 60 or 65 degrees will check the growth of bacteria and prevent bad flavors and quick changes in the milk."

" What causes milk to become sour ?"

" The presence of lactic acid germs changes the milk sugar to an acid which finally causes the casein to thicken."

" Is it safe to use milk after a fly or hair or other bacteria-carrying substance gets into it ?"

" Not to infants or small children, at any rate."

BUTTERMAKING

(By A. E. Gracey, Dairy Inspector in Western Ontario.)

To an audience, composed chiefly of farmers' wives and daughters, at Kent Bridge, Mr. A. E. Gracey, Dairy Inspector in Western Ontario, advised greater care in the making of butter. Apart from cleanliness and good cream, it was necessary, he said, to apply considerable science in churning. Many buttermakers make the mistake of putting too much cream in the churn ; it should not be more than one-third filled at the time the process commenced. When the butter begins to break cold water might be added, and after that salt. It was very essential that the butter granules be not made large and massive by over-churning. When the butter came together the churn should be stopped, as this would ensure fine particles or granules.

BEEKEEPING

"Interest is the first essential in successful beekeeping, and after that knowledge," said Mr. Frank Millen, of the O. A. C., when addressing the farmers of North Glencoe district. The beekeeper must study his bees and their habits, read widely on the subject and be a subscriber to an agricultural weekly that gives space to bee interests. He should be ever watchful for diseases, especially the foul brood disease, and when suspicious of the prevalence of any form of disease he should write to the Agricultural Department at Toronto, and ask for an inspector to be sent to examine his hives. It would be to the interest of every beekeeper to learn the symptoms of the different diseases to which bees are subject, that he may diagnose doubtful cases himself.

The opportunities for profit in beekeeping are immense, as there is scarcely a single district but can support a hundred or more colonies. Honey is gathered from a source which bees alone can reach. Bees also have a value on the farm in pollenizing the various fruit blossoms, and thus swelling the annual returns from the fruit crops. This is also true of both clover and buckwheat crops.

Questions and Answers

(Replies made by Mr. Eric F. Millen, Guelph.)

"When should honey be extracted ?"

"When the comb is two-thirds capped the honey is then ripe and of a good quality."

"Which pays better, extracted honey or honey in the comb ?"

"They call for different management. Comb honey is produced better by experienced beekeepers, and the extracted would be better for a new man to exploit."

"What make of hive do you recommend ?"

"The ten-framed Langstroth is a standard article, and will give most general satisfaction."

"How long would you advise to keep a queen bee ?"

"I believe a queen bee has served her usefulness after two years."

BEE DISEASES

(Replies by Mr. Eric F. Millen, Guelph.)

" How can you recognize foul brood ?"

" There are two foul brood diseases both attacking the larvæ. The American foul brood may be detected by the sealed brood being sunken and perforated, and of a darker color than the healthy capped brood. When the cappings are broken the larvæ are seen to be of a dark or brownish color, and on inserting a toothpick or a twig into the larvæ and pulling it out again we find that it ropes out often four to six inches. These symptoms should be sufficient for the average beekeeper, but in case of doubt a sample should be sent to the Provincial Apiarist at Guelph.

" With the European foul brood the larvæ are attacked at an earlier stage, and when the frame is extracted we find the larvæ, instead of being of a good, pearly-white color and occupying a circular position in the cell, are of a brownish color and usually dropping at one end. A toothpick inserted into the larvæ shows little ropiness. Any time the beekeeper notices the larvæ discolored he should at once suspect the disease, and receive authoritative advice as to diagnosis."

" What treatment do you recommend for foul brood diseases ?"

" In the case of the American foul brood take a clean hive, using starters of foundation in the frames and shake off all bees from the frames of the old hive into the cleaner and new one, taking care not to spill any honey. The old hive should then be thoroughly scorched out and the combs burned or melted down to a wax. The honey should never be fed to bees, as it is here that the disease lurks. The same treatment holds good for European foul brood, with the addition of introducing Italian queens. The Italian race of bees has proven itself much more immune than the native black bee."

THE ORCHARD

From March until June is suitable for pruning fruit trees, according to Mr. Lawson Caesar, of the O.A.C., at Guelph, who talked on the subject of "Rejuvenating Old Orchards." The first time the tree is pruned it is not well to do too much trimming—just the old wood should fall then. Each twig that is cut should disappear entirely, for to leave a stub means rot and decay to that part of the branch. If the twig is pruned close to the mother branch it will heal up quickly, and not cause the tree any untoward injury. The tree upon the completion of the job should present an umbrella shape.

Another force in rejuvenating an old orchard is spraying the trees to overcome insect and fungus pests. San Jose scale is the most common parasite. Lime sulphur in a one-to-nine solution should be applied two or three weeks before buds burst ; a second time in one-to-thirty-five strength, with two pounds of arsenate of lead added and applied just before blossoms open, and a third time in one-to-forty solution just as the blossoms fall, applied more thoroughly than before.

FIGHTING PESTS

(Replies made by Mr. L. Caesar, Guelph.)

"How do you keep worms out of apples?"

"Worms that feed in apples are nearly always the larvæ of the codling moth, our worst apple pest. Thorough spraying with two pounds of arsenate of lead and forty gallons diluted lime sulphur should be applied immediately the blossoms have nearly all fallen.

"Is there a danger in spraying of giving the trees too much of this poisonous solution?"

"None, whatever. To spray thoroughly, one must not be at all sparing in the use of the mixture, but should even drench his trees. The higher the pressure the better; it should never be less than 100 pounds. Failures in spraying are generally due to lack of pressure and thoroughness."

"Does this spraying suffice for scabs?"

"No. Scab begins to spread first, just as blossoms are beginning to burst, and, therefore, we always spray with lime sulphur and arsenate of lead at that time in order to prevent the disease getting a start on the leaves or stems of the blossoms. These two sprayings generally prove sufficient for scab."

"What can be done for black-knot in fruit trees?"

"Cut the branch off about four inches below where it occurs, and at any time during the season. If any trees have been killed by it, cut them out and burn also, as black-knot is a fungus disease and requires to be destroyed by fire."

STRAWBERRIES

At North Glencoe, Mr. J. P. Carey, Dominion Fruit Inspector, emphasized the opportunity afforded Ontario in strawberry cultivation. Those who have grown this fruit and have given it a fair share of attention have been amply repaid, he said. The demand for strawberries is always very keen and prices have been good now for a number of years.

Pollenization of the plants is a vital point in strawberry culture. For this reason growers should be careful to have at least two or more varieties of strawberries, as with only one variety the bees cannot accomplish sufficient to ensure a bountiful crop. Sandy loam is the ideal soil, but where a farmer is handicapped by a stiff clay he can convert it into strawberry soil by incorporating sand in it. The blow sand of Norfolk, which is useless for most crops, has proved the best in Canada for growing strawberries.

The importance of protecting strawberry plants in winter cannot be over-emphasized, he said. Especially where very little snow falls, the plants should have a good covering of straw. In fact, Mr. Carey advised keeping straw about strawberry vines all the year round. In summer it provides a good carpet and ensures clean fruit, while in wet weather it checks evaporation. Frequent cultivation, he said, is necessary, more particularly during the growing season.

SUGAR BEETS

At Kent Bridge, Mr. J. N. Mowbray, of Wallaceburg, gave the farmers a short talk on methods of sugar-beet cultivation. "Thorough cultivation of the soil, beginning the previous fall if possible," he said, "is essential to a good yield of sugar beets." Mr. Mowbray recommended ploughing shallow after a crop of wheat, oats, barley or clover, and the application of manure on the land in the fall. Sowing should also be done shallow, he said, from one-half to an inch deep, and using from 15 to 20 pounds of seed per acre. Early thinning was another point, and this should be done when the plants have from four to six leaves. Cultivation was necessary every week until the plants cover the ground, practically speaking. Then the harvest must not be too long delayed. Like grain, there is a point in the growth of beets when they are ripe. If they are not harvested then a second growth may come in the advent of wet weather, and water will replace sugar in the weight of the beets.

POTATOES FOR PROFIT

Mr. J. B. Fairbairn, in his talk regarding potatoes for profit, said: "Many establishments, such as hotels, which use large quantities of potatoes, pare the tubers with a machine. Because of this the market is calling for a potato of uniform, medium size, with shallow eyes. It is essential, therefore, if we are growing potatoes for sale, to use potatoes of this kind for seed. The selection of seed should be made while the potatoes are still in the hills, and the hills selected from those which are still green, as this indicates vitality. In cutting the seed make the cuttings of one or two ounces in weight, with two to four eyes to each; place the cuttings in land plaster as cutting goes on and plant the same day that they are cut. In the matter of fertilizing you will find it pays you to use 100 lbs. of acid phosphate and 25 lbs. sulphate of potash to each ton of barnyard manure. In spraying, you will find arsenate of lead superior to Paris green, because the former will adhere longer to the leaves than will the latter."

Prof. C. A. Zavitz said : " If Ontario farmers should confine themselves to three varieties—Rural New Yorker No. 2, Empire State, and Davies' Warrior—it would be better for growers, better for buyers, better for Ontario as a whole. For a very early potato Extra Early Eureka will be found best. It is no more necessary to change seed in potatoes than to change seed in grain. We have grown twenty-one varieties at the College for seven years without changing seed, and in all cases save one these potatoes are yielding more now than they did seven years ago."

GOOD SEED

" Seed Selection " was the subject of an interesting address delivered by Mr. A. Mason, Assistant in Field Husbandry at the O. A. C., to the farmers at Tilbury. The speaker gave a list of the varieties of each cereal that experiments conducted at the Guelph College have proven superior to the ordinary kinds of seed sown. In oats, he declared, Daubeney, Siberian, Banner and O. A. C. No. 72 were the most promising ; in barley, O. A. C. No. 21 and Mandscheuri ; in wheat, Dawson's Golden Chaff and American Wonder ; in spring rye, O. A. C. No. 61, which gives four bushels per acre more than any other variety ; in peas, Early Britain, New Canadian and Beauty ; in corn, White Cap and Yellow Dent; and in mangels, Yellow Leviathan, Sutton's Mammoth, and Long Red.

Mr. Mason pointed out the difference in oats due to the nature of the hull. There was a difference of from 22.5 to 49 per cent. in the quantities of hull in various oats. There is also a difference to be reckoned on in the strength of the straw, some oats varying from 15 to 65 per cent. in straw length.

In experiments carried on at Guelph over a number of years, he said it had been shown that large seed produced 19.1 per cent. more in grain crops than small seed ; in rape seed, 40.3 per cent.; in root crops, 60.1 per cent. Plump seed, he said, has given much better yields than shrunken, broken, weevily, sprouted or immature seed.

The value of sowing a crop on the first suitable day in the spring was dwelt upon by the speaker. The difference in a wheat crop had been found to be a loss of 21.7 pounds per acre for each day later than the first suitable sowing day ; in a barley crop or oat crop it meant approximately 37.7 pounds' loss per acre for every day later than the first two suitable sowing days, and in peas the loss per acre for each day later was found to be 15.9 pounds.

SEED CORN

The value of selecting strong seed corn was dwelt upon by Mr. W. E. J. Edwards, Secretary of the Ontario Corn-growers' Association, and Representative of the Department of Agriculture in Essex County, before the farmers of Chatham district. Some kernels produce poor stalks of corn, and others bring forth sturdy plants, with abundant crops.

Farmers can know before planting which seed will bring good results if they will take the trouble to test for germination. A few hours spent in this work may decide for the planter whether he will have a good or an indifferent crop. A dozen good ears of corn, said Mr. Edwards, will plant an acre. Let one ear be of poor quality of seed, and one-twelfth of the acre, or one acre in twelve, will produce a correspondingly poor crop.

The three essentials in successful corn-growing are good seed, thorough cultivation, which generally involves underdrainage, and, lastly, rotation of crops on the land.

Experiments carried on in Essex over three years, to ascertain the proper date for planting corn, he said, have given the following results : Planting April 27-30, yield 74.9 bushels per acre ; May 6-10, yield 77.5 bushels ; May 19-20, yield 75.7 bushels ; May 25-30, yield 66.5 bushels ; June 2-5, yield 48.1 bushels.

FIELD CROPS

QUESTIONS AND ANSWERS

(Replies made by Prof. C. A. Zavitz, Guelph.)

" Is Eureka a good variety of potato to grow in Ontario ?"

" Yes, the Eureka is one of the best of the very early potatoes."

" Where can O.A.C. No. 72 oats be obtained ?"

" There is no available seed of that choice variety at present. Last year about 250 farmers received one pound each, and it came highest in the experimental records of the season."

" What gives the biggest return under average conditions, a field of oats, wheat or barley in Ontario ?"

" Barley gives the highest results, but experiments show that a mixture of oats and barley will yield about 200 pounds of grain per acre more than either grown separately."

" What is the best annual pasture crop ?"

" As a result of twelve years' experiments we find that a mixture of 51 lbs. of oats, 30 lbs. Early Amber sugar-cane, and 7 lbs. common red clover gives the best results. The first two can be mixed and sown from the grain box of a seed drill and the clover from the grass-seed box placed in front of the tube drill."

" When should this mixture be sown ? When would it be ready to pasture ? Is the crop of value next year ?"

" This mixture for an annual pasture crop should be sown about the first week in May in an average year. It should be ready to pasture six weeks afterwards. The clover crop will furnish a good crop of hay in the following year, and a second crop could be pastured, converted into hay, allowed to produce seed or be ploughed under as green manure."

ALFALFA AND PASTURE CROPS

Prof. C. A. Zavitz said that alfalfa can be sown at various times. It can be sown in early spring on fall wheat or fall rye, either on the last of the old snow or on new snow ; it can be sown with spring wheat or barley, not over a bushel of grain being used to the acre ; it can be sown on a field plowed out of sod last autumn and kept cultivated until some time in July, from the 15th to 25th of that month by preference. In this case seeding should take place just after a rainfall and without a nurse crop.

If you have not grown alfalfa before, or if you have not succeeded with it, get a package of nitro-culture from the Agricultural College. Twenty-five cents worth will treat a bushel and a bushel will sow three acres.

If you have not succeeded with red clover get nitro-culture for that too, but be sure you say, in applying for the culture, whether it is for alfalfa or red clover, as the two cultures are altogether different.

If you want a permanent pasture this form of seeding will be found most satisfactory :

Alfalfa	5 lbs.
Alsike	2 lbs.
White clover	2 lbs.
Orchard grass	4 lbs.
Meadow fescue	4 lbs.
Tall oat grass	3 lbs.
Meadow foxtail	2 lbs.
Timothy	2 lbs.

That makes 24 lbs. to the acre. Orchard grass is coarse but in a hot, dry summer it furnishes a certain amount of fodder, and it also protects other grasses from the scorching effect of the sun.

FERTILIZERS

QUESTIONS AND ANSWERS

(Replies made by Mr. A. L. Gibson, Guelph.)

" Do commercial fertilizers ever injure the land ?"

" If applied properly they can have no injurious effect upon the soil. It is well always to follow directions carefully."

" How can we tell what fertilizers to use on our farms ?"

"It is necessary to know what your soil requires. This spring you should make out five small plots and send to the College at Guelph for samples to try on each plot. These will be furnished you free, and the experiment will make you a student in this vital matter."

"Will artificials take the place of farmyard manure?"

"No. They are to supplement the farmyard manure with available plant food at the right time in order to get the biggest crop possible."

"Which is the strongest of farm manures?"

"Hen manure is undoubtedly strongest, then pig manure and horse manure, in order."

"Is hen manure too rich for soil?"

"Yes. It is well to mix with five times the quantity of light earth before applying."

"Which is the best farm manure for the garden?"

"For a heavy soil long green manure, advisably cow; for a light soil, well-rotted stuff, such as horse manure."

UNDERDRAINAGE

In addressing a large number of farmers at St. Joachim, Mr. W. R. Reek, of the Department of Agriculture at Toronto, stated that a farmer who is suffering from the disadvantage of wet land should not defer putting in tile because he has not the ready money. He may borrow it through his township by a very equitable arrangement, he said, and he may in this way have the benefits of underdrainage a year or two sooner. Mr. Reek declared that the laying of tile underdrainage increases the yield in corn one-third more, in wheat from 10 to 15 bushels an acre, and in oats from 15 to 20 bushels per acre. A farmer should be able to make clear gain of at least ten dollars an acre.

LAYING TILE

(Replies made by Mr. J. R. Spry, Guelph.)

"How can we borrow money to lay tile?"

"Apply to your township council to pass a by-law to issue debentures in order to raise the money. The Ontario Government buys the debentures. The township council is then able to loan you an amount over $100, provided you are a property owner and you ask for the money to lay underdrains. You pay it back in taxes. On a loan of $100 your taxes would be $7.36 extra for twenty years.

"Does heavy clay land require a different system of underdrainage?"

"Yes. The rows of tile should be placed closer together, say, about 60 feet, and at a depth of from 2½ to 3 feet."

"How can a plant obtain more moisture in a dry season in drained land than in land undrained?"

"For the reason that the roots are more deeply established and a greater percentage of the summer rains is absorbed by the drained soil."

"Will a ditching-machine in heavy clay dig to the grade ?"

"No. 3 ditcher, being used extensively, is giving just as good satisfaction in heavy clay, keeping its depth and grade true and uniform as in lighter soil. The only difference is the slower rate of digging."

CONCRETE

For the first time in Ontario, and probably in the Dominion, the making of concrete occupied a place among the list of agricultural topics of instruction given to the farmers. A portion of one of the exhibit cars making up the "Better Farming Special" was devoted to a display of concrete materials, machinery and tools. Mr. V. T. Goggin, of Toronto, an expert on all that pertains to cement and concrete, was in charge, and explained the process of making in a practical way to the farmers.

The backbone of concrete is cement, he said, and unless the cement be of first-class quality and in perfect condition the concrete will not be a success. It may be taken for granted that the cement leaves the mill in good condition, but it rapidly absorbs moisture, and thus in transit, in storage or in handling it may deteriorate. For this reason cement should always be tested before using. Mix a handful of the cement with water and place on a small piece of glass in a little pail and steam for a time. When the cement has hardened its firmness can readily be ascertained.

It is very essential to store cement in a dry place. In buying it a farmer should reject any bags that contain any lumps that cannot be crushed with the hand, for they have taken up moisture, and the concrete will not be up to the mark. The crushed stone that is used in mixing for concrete should be the hardest possible to get at a reasonable price. Of our Ontario stones, granite is hardest, trap or blue rock next and our limestone last of all. The gravel should be coarse and sharp.

SEPARATOR CALVES

Mr. John Campbell, of Woodville, made a plea for the young calf in addressing a large number of farmers when the train laid over in North Bothwell. The calf should arrive in the fall, he argued, as this arrangement means that both the cow and her calf will get better care from the owner. The farmer can give more time to looking after the calf when the busy season is over, and the cow will give just as much milk in winter as in summer if properly fed and cared for. The average man will not leave his fields to put time on a calf, although he is anxious that it should thrive and produce beef.

Mr. Campbell, while acknowledging the advantage of cream separators, deplored the effect that they had upon the calf-raising industry. Calves fed on separated milk are not as hardy, nor will they ever put on as much beef as those fed on milk that is skimmed in the "good old-fashioned" way. For two or three weeks, at any rate, young calves should be fed whole milk, as it gives them a start in life that counts materially in the final finish. They should also get their feed three times a day instead of twice, as is commonly the case, for, the speaker explained, feeding calves twice a day is too hard a tax on their stomachs.

The first solid food they should get is a little flaxseed meal, he said, and later sweet turnips, alfalfa, rape and lots of grass should be allowed them.

THE EASTERN TOWNSHIP SPECIAL

A second "Better Farming Special," arranged in conjunction with the Canadian Pacific Railway Co. and the Boards of Agriculture of the Provinces of Quebec and New Brunswick, was made up during the month of May, and on June 3rd commenced a three-weeks' tour through these two Provinces over the lines of the C. P. R. The farmers residing in the territory traversed by the "special" showed their great appreciation of the efforts to provide them with a knowledge of better-farming methods by visiting the train in great numbers. The composition of the train varied very little from that which toured through the Province of Ontario. Aboard the special were sixteen lecturers, half of whom were English-speaking and half French-speaking, drawn from the leading agricultural colleges of the Province and the Agricultural Departments of the Provincial and Dominion Governments. As the representative of the C. P. R., Mr. H. P. Timmerman was in charge of the train.

The train consisted of three demonstration cars, specially equipped with exhibits which had been arranged by the staff of the Macdonald College at Ste. Anne de Bellevue, and there were also two coaches which were used as lecture halls. The itinerary called for nearly fifty stops during its absence from Montreal. At every place there were crowds waiting the arrival of the special, and immediately the train came to a standstill in the siding the people swarmed into the demonstrating cars, which were the principal objects of interest.

In the first car, the dairy exhibit had many features valuable from an educational point of view. A row of bottles of milk taken at the same time was shown. The contents of one were pure, while in the others some form of dirt had been permitted to remain, and the effects were unbelievable when not seen. A single hair of a cow, a few grains of road dust, a few drops of impure water, were some of the things which completely changed the appearance in fifteen days. While the effect would not be noticeable in the appearance of the milk, which would be fresh enough for use, the possibilities would be there in the forms of bacteria. A scientific method of cooling milk was shown, whereby the can was placed in a tank of water which was fed from the bottom and drained from the surface, so that the warmer water was let off, and only cold water taken in.

In another car were two cows, one a model cow which yielded 75 pounds of milk per day, and an average one which yielded less than 50 pounds per day. Comparisons were made by Prof. Barton, who also explained that the hogs in the pen adjoining were average market hogs, but that only one was really ideal. The importance of early seeding was strikingly shown by another exhibit. A series of glass tubes containing varying amounts of grain were numbered according to the week of seeding, and each week of delay reduced the production per acre by a considerable extent. Professor Lochhead's display of insects and weeds bore placards telling what to destroy, and why and how. It also told which insects and plants were valuable. The "paint brush" is one of the worst pests the farmers have in Quebec, and methods of eradicating this objectionable weed were described by the Professor, who said that the ordinary thorough tilling of the ground was the best way of preventing this.

It was found that in the Eastern Townships, where there was a preponderance of English, the farms were better, and can be compared with those in Ontario. Both French and English farmers were taught many useful lessons in advanced agriculture and scientific methods of growing crops and raising stock.

A feature of the special was the encouragement given to women and children. Mr. Timmerman announced from the first that special attention should be given in this direction, as the younger people were the future farmers of the country. As a result of this, every question asked by the youths was answered with exceptionally great care, so that the reply might be interesting, complete and impressive, and bear fruit in after years.

PHOTO BY ALVINSTON
BETTER FARMING SPECIAL
P.R. & ONTARIO DEP'T OF AGRICULTURE BETTER FARMING SPECIAL AT BOTHWELL
1912

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WHY ?

BECAUSE Western Canada offers the greatest modern opportunity to industrious farmers.

BECAUSE The success related in this little folder can be duplicated in your own experience.

BECAUSE Western Canada affords good lands, good markets, excellent educational facilities and an unrivalled climate.

BECAUSE Land at $11 to $30 per acre in Western Canada produces greater crops than land at $100 to $200 in old and exhausted districts

BECAUSE The Canadian Pacific Railway will assist desirable settlers to the extent of giving 20 years to pay for the land, and lending the farmer $2000 at six per cent. to make improvements, and in case of the approved land purchaser who is in a position and has the knowledge to take care of his stock, will advance cattle, sheep and hogs up to the value of $1000 on a loan basis, so as to enable the settler to get started from the first on the right basis of mixed farming.

WHAT THE SETTLERS SAY.

Much has been said and written of the opportunities afforded by wonderful Western Canada, for practically all classes of settlers, but the best evidence is the personal experiences of farmers who have lived in the country for years and have first-hand knowledge whereof they speak. The following letters are samples of hundreds received from satisfied settlers in all parts of Manitoba, Saskatchewan and Alberta.

THE CROP IS SURE.

I came to Red Deer nine years ago, from Iowa, and have done well here. I have now 1,200 acres of land, of which about 350 is under cultivation. I keep from 100 to 125 head of stock and have found that mixed farming pays well. I have milked a few cows each year, and have always done well on them.

This is a good country for a young man. I have not missed a crop in nine years.

I have been through Mexico and the Western States, and this is the **best country in the world for small grain,** better than Iowa, and that is good. I love old Iowa. Here there is no rust, no bad insects, and the crop is sure. Winter wheat gives a good average crop, and I have seen it yield as high as 45 bushels per acre.

Vegetables grow well; potatoes, parsnips, beets, cauliflower, beans, peas, etc. Potatoes yield 400 bushels per acre at times. Alfalfa is a good crop when the soil is inoculated.

I have timber on my place, and the river runs through it, and I would not take less than $50 an acre for my land today.

Yours truly,
(Sgd.) J. NORTHEY

Red Deer, Alta., May 17, 1911.

CERTAINLY AN EXCELLENT COUNTRY.

I have been here for three years, now farming 270 acres, coming from Sterling, Colorado, where I lived for 23 years, a greater part of which period I was engaged in agriculture. This is certainly a most excellent country for farming, especially for barley, oats and potatoes. My potatoes this year went over 200 bushels to the acre and were fully as high in quality as the celebrated ones grown in the state I came from. My barley, which has been in stook for some time now, will go between 40 and 50 bushels per acre. Last year my oats went over 75 bushels per acre. This year they are not quite as good for the reason that I drilled them in on stubble. I have no hesitation in saying that there is no trouble in raising most profitable crops here. I would advise any farmer wishing to better his condition to come to Canada.

(Sgd.) A. L. JOHNSON.

Strathmore, Alberta, Sept. 19, 1912.

NEVER SAW SUCH CROPS IN WASHINGTON.

In all my experience of 33 years' farming in Lewis County, Wash., I never saw crops grow in such abundance as grew on my farm in Alberta this year. For instance, I have now in my possession, 108 stalks that grew from a single grain of wheat, which is the most marvelous stool of wheat that I ever saw. The crop from the 620 acres this year will net me $22 an acre, which is very satisfactory to me. From ¾ of an acre, I dug 260 sacks of potatoes, after having supplied our table for over 2 months. These were as fine potatoes as I ever ate. I believe that there is no better soil and climate on the North American continent for raising wheat, oats, barley, flax and nearly all kinds of roots and other vegetables. With my method of farming, I am confident that I could make large profits from this land, even if I had paid $100 per acre. In addition to the 1,600 acres I purchased in 1911, my wife has purchased 160 acres, and in September this year, I bought 480 acres more from the Canadian Pacific Railway, adjoining my original purchase.

In 1911 I saw the crop grown and harvested on the Canadian Pacific Railway demonstration farm at Brooks, managed by Mr. M. L. Freng, who informed me that his crops yielded as follows: Wheat, 60 bushels per acre; barley, 61 bushels; oats, 112½ bushels; and field peas, 38 bushels per acre. These crops, as well as my own were raised without irrigation or fertilization of any kind. With my household goods and stock shipped from Washington was a cow, for which I paid $50. This cow had no feed, excepting native grass, and she produced milk and butter enough during last summer to supply 9 people. All kinds of live stock do well in this country, and fatten on the native grasses.

(Sgd.) C. W. LONG.

Brooks, Alta., Dec. 1, 1912.

NOT A POOR CROP IN THE NEIGHBORHOOD.

I came to the Namaka colony of the Canadian Pacific improved farms last spring from Buckinghamshire, England. I found a comfortable farm awaiting me, with substantial buildings, well, fences and fifty acres in crop. I have already cut my barley, wheat and oats. The wheat is a fine crop and will go 35 bushels to the acre. My barley and oats are also exceptionally good crops, in fact, there is not a poor crop in the whole colony. I have seven milch cows besides some chickens, hogs, etc. My monthly earnings have averaged over $40 per month, and that before taking off a crop of any kind. My live stock operations have more than made a living for myself and family of nine. In short, I feel very much satisfied with conditions in general here and know that my farm will make money for me right along.

(Sgd.) F. W. BURTON.
Strathmore, Alta., Sept. 18, 1912.

LAWS ARE WISELY ADMINISTERED.

This district looked good to us when we first saw it and three years' work on our farm in township 41, range 19, W-3, has greatly strengthened our opinion that, for the man with moderate means who wishes to engage in profitable farming, the Wilkie district is entitled to a great deal of attention.

We believe in mixed farming, and keep 28 head of stock which we are able to pasture on the native hay at practically no expense.

Land values are advancing rapidly in this district and we value our land at $27 per acre. We find the climate attractive and healthful and general conditions throughout the Wilkie district are good. Prior to coming here I had no experience at farming.

Future prospects look good to us. We expect to crop 300 acres this fall and if the present favorable weather continues we ought to break all crop records. The laws in Saskatchewan are wisely administered and the schools are up to date.

We have good and profitable markets close at hand and have no trouble in disposing of anything we produce from the farm.

WM. R. COOK.

Wilkie, Sask., June 1, 1911.

WESTERN CANADA CANNOT BE BEATEN.

I have only one opinion about Western Canada and that is that it cannot be beaten, taking all things into consideration. I arrived here five years ago and prospects improve each year. I came from Minnesota. I find the climate to be agreeable and general conditions are very good, indeed.

I believe in mixed farming and have horses and cows and a full outfit of agricultural machinery. I came here with practically no money and I now own a fine quarter section worth at least $5,200, and am buying 160 acres from the Canadian Pacific Railway Company on easy terms. I reckon my income per acre to be from $15 to $20 clear.

I have every faith in the future of Saskatchewan and each succeeding year confirms my opinion—that this is a splendid country for a man to go ahead in quickly. During my five

years here my wheat has averaged thirty-one bushels per acre; oats, seventy bushels; barley thirty-five bushels to forty bushels; flax, fourteen bushels. This is spread over a five year average. Some years the average has been much higher. The soil is very fertile and to the man who works it intelligently, will yield golden harvests.

(Sgd.) CHAS. WOOD.
Candahar, Sask.

LIKES THE SASKATCHEWAN CLIMATE.

In publishing this letter I want to mention that I feel that you have given me an opportunity to benefit my friends and my late fellow citizens of the U.S.A., and that I have never regretted the day that I left that country from the point of view of bettering my circumstances and bettering myself.

I came to Yorkton district in 1909, at which time I was possessed of $1,500, with which I purchased the S. W. ¼ 7-26-5 W2, for which I paid $10 per acre, $300 down and the balance of the money I utilized for buildings, buying stock, etc. I am now possessed of three quarter sections of land which are almost paid for, with many horses, cattle, and a good amount of cultivation.

I came from Webster County, Iowa, and I feel that I would just as soon live in this district as the district I came from, as far as climate is concerned, and, on the other hand, land here is cheaper and the income from my Canadian farm is greater than it would be from the place I came from.

I have been farming practically all my life and I consider the prospects for this country were never brighter than at the present time, for the price of land is extremely reasonable and the proximity to markets in this district is a great help. I am writing this letter in good faith, and will be pleased to answer any inquiries from intending settlers in order to show that I am prepared to back up the statements of this letter.

(Sgd.) A. ROBBINS.

Yorkton, Sask.

CAME IN DEBT, NOW OWNS TWO THOUSAND ACRES.

I came to the province of Manitoba, from Ontario, at the age of 29, with a carload of settler's effects and only $50 in my pocket. Being in debt for $800, which amount I had borrowed to buy the outfit, and not having sufficient money to purchase land, I rented a farm and with the outfit commenced mixed farming on a small scale. It paid so well that at the end of five years I was able to purchase 800 acres close to the town of Neepewa at a cost of $11,400. This in itself proved a splendid investment, as the land is now valued at $50,000. My little rented farm has grown to over 2,000 acres, commodious stables and barns, 100 head of pure bred Shorthorn cattle, 12 head of horses, 30 brood mares and colts and a large number of pure bred Yorkshire hogs which I sell locally for breeding purposes and obtain the highest prices for them. Shipping facilities are excellent and there is a ready market for all classes of live stock at all seasons of the year. The climatic conditions of this province are all that can be desired and I may add that I have never suffered a severe reverse since I came to Manitoba in 1891.

(Sgd.) STEPHEN BENSON.
Neepawa, Man., Jan. 9, 1913.

WELL PLEASED WITH MANITOBA.

Western Canada appealed to me as a fine farming country, so I left my old home and came to Manitoba and purchased 160 acres in the famous Souris valley. Year after year my land yielded splendid crops of all kinds of grain and as my success continued I was able to purchase more land and increase my stock. I have now 640 acres, a modern house, large barns and stables, fourteen pure bred horses, 20 head pure bred Shorthorn cattle, and poultry. I have harvested 37 bushels of wheat, 100 bushels of oats and 60 bushels of barley to the acre. I am well pleased with my work in Manitoba. All kinds of grasses can be grown here; alfalfa, clover, rye, timothy, etc. Splendid water can be obtained at a few feet and we have also the Souris River. All dairy produce finds a ready market and prices obtained are high; shipping facilities are of the best.

(Sgd.) G. L. FERGUSON.
Souris, Manitoba, Jan 13, 1913.

FROM INEXPERIENCE TO AFFLUENCE.

I came out to this country from England in 1885, a green lad, with absolutely no experience at farming. I worked out for a year and a half and then started on my own account, and notwithstanding my lack of experience, my property has increased from a quarter section costing $480 to two and a half sections worth about $35,000, and I also have 23 head of horses, 28 cattle, 43 sheep and some pigs. In the past my principal crop has been wheat and my highest yield was 43 bushels to the acre. My oat crop generally runs from 35 to 50 bushels. I have not attempted flax although I have seen some very good crops in the district.

I am gradually working into mixed farming, and consider the prospects for the future very favorable. Although sheep raising calls for a certain amount of fencing I feel assured that sheep are the most paying crop on the farm.

The climate, although somewhat severe in winter, is more healthful and bracing than in England. On visits made to England since I came to Manitoba, I have felt the damp cold of the winters in the Old Country very considerably.

Our water supply is good. Using sand points it is always pure and apparently inexhaustible.

I am thoroughly satisfied with my work in Manitoba.

(Sgd.) THOS. ZACHARY.

Austin, Man., Oct. 14, 1912.

If the personal experiences of these farmers interest you in Western Canada, write for information to the

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